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David R. Miller

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3014

36412 7590 01/03/2007  
DUCKOR SPRADLING METZGER  
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EXAMINER

CORRIELUS, JEAN M

ART UNIT

PAPER NUMBER

2162

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/03/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/872,457

Applicant(s)

MILLER ET AL.

Examiner

Jean M. Corrielus

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2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is in response to the amendment filed on November 27, 2006, in which claims 1-16 are presented for further examination.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 20, 2006 has been entered.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, claims 1, 4 and 7 recite "a consumer cluster set having a plurality of consumer cluster being the terminal nodes, each decision node indicating a certain portion of the consumer population and splitting the certain portion of the consumer population into at least two

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other nodes in response to one of the consumer segmenting variable”. First, it is not clear as to how the plurality of consumer cluster being the terminal nodes, when the classification tree as claimed includes a plurality of decision nodes and a plurality of terminal. If the plurality of consumer cluster can be the terminal nodes, there will be no need for the classification tree to produce a consumer cluster set having a plurality of consumer cluster. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed. More specifically, the claimed feature of “a consumer cluster set having a plurality of consumer cluster being the terminal nodes, each decision node indicating a certain portion of the consumer population and splitting the certain portion of the consumer population into at least two other nodes in response to one of the consumer segmenting variable”; and the limitation as claimed in claims “storing data for defining evaluation profiles to evaluate partitioning of the consumer population; determining counts for each of the decision nodes of each of the classification trees, the counts including a right split count, a left split count, and a total count for each of the decision nodes; storing summaries of the counts; determining a performance for each of the classification trees based on the evaluation profile data and the summaries of counts, wherein the determining a performance includes calculating a measure for each of the decision nodes of each of the classification trees based on the counts of each decision node; and comparing the performance of the classification trees to determine the classification tree producing the optimal consumer cluster set, whereby the consumer clusters in the optimal consumer cluster set are used to focus marketing on groups of

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consumers likely to purchase a marketed product or service.” are not described in the specification to enable one having ordinary skill in the art to make and use the invention. Figures 3 and 4; and specification page 4-5, paragraphs [0019] and [0020] refer to classification trees, wherein population at the nodes are split based on decision of the nodes. So the partitioning program searches all possible classification trees to determine an optimal combination. The specification paragraph [0025] and [0026] define the profile definitions module for defining evaluation profiles. However, such abovementioned of the specification does not determine counts for each of the decision nodes, determine a performance for each of the classification trees nor comparing the performance of the classification trees in order to produce an optimal consumer cluster set. Based on the analysis provided above and substantial evidence or reasoning, the examiner provided that one having ordinary skilled in the art would not recognize in the disclosure a description of the invention defined by the claims. The limitation as claimed “a consumer cluster set having a plurality of consumer cluster being the terminal nodes, each decision node indicating a certain portion of the consumer population ad splitting the certain portion of the consumer population into at least two other nodes in response to one of the consumer segmenting variable”; and the limitation as claimed in claims “storing data for defining evaluation profiles to evaluate partitioning of the consumer population; determining counts for each of the decision nodes of each of the classification trees, the counts including a right split count, a left spilt count, and a total count for each of the decision nodes; storing summaries of the counts; determining a performance for each of the classification trees based on the evaluation profile data and the summaries of counts, wherein the determining a performance includes calculating a measure for each of the decision nodes of each of the classification trees

based on the counts of each decision node; and comparing the performance of the classification trees to determine the classification tree producing the optimal consumer cluster set, whereby the consumer clusters in the optimal consumer cluster set are used to focus marketing on groups of consumers likely to purchase a marketed product or service.”; and also the claimed feature of “said optimal consumer cluster set having a plural of optimal consumer clusters, wherein each consumer in the set of consumers is included in only one of the consumer clusters in each consumer cluster set”; and the limitation as claimed in claims 1, 4 and 7 are not described in the specification to enable one having ordinary skill in the art to make and use the invention. The specification paragraph [0018] defines the use of classifying consumers in clusters comprising generating a plurality of classification trees based on demographic data for a set of consumers and behavioral data for a set of consumers, each of the classification trees producing a consumer cluster set, searching the consumer cluster sets for an optimal consumer cluster set, the optimal consumer cluster set having a plurality of clusters of consumers. So, the consumers in each cluster of the plurality of clusters have substantially similar behavioral and demographic characteristics to each other and different behavioral or demographic characteristics from consumers in all other clusters of the plurality of clusters. It is clear that such abovementioned of the specification does not provide the use wherein the optimal consumer cluster set having a plurality of optimal consumer cluster, wherein each consumer in the set of consumers is included in only one of the consumer clusters in each consumer cluster set. Based on the analysis provided above and substantial evidence or reasoning, the examiner provided that one having ordinary skilled in the art would not recognize in the disclosure a description of the invention defined by the claims. The limitation as claimed in claims 1, 4 and 7 “said optimal consumer cluster set

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**having a plural of optimal consumer clusters, wherein each consumer in the set of consumers is included in only one of the consumer clusters in each consumer cluster set** are not

supported by the as-filed disclosure, which is violated the written description requirement. In re Rasmussen, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981). Applicant should duly note that the first paragraph of 35 U.S.C. 112 requires that the "specification shall contain a written description of the invention". Applicant should also note that the essential goal of the description of the invention requirement is to clearly convey the information that an applicant has invented the subject matter which is claimed; and to put the public in possession of what the applicant claims as the invention." Furthermore, the written description requirement of the Patent Act promotes the progress of the useful arts by ensuring that patentees adequately describe their inventions in their patent specifications in exchange for the right to exclude others from practicing the invention for the duration of the patent's term. Indeed, the specification does not satisfy the written description requirement because the specification does not describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.

Claims 14-16 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either specific and substantial asserted utility or a well established utility because it is impossible to one having ordinary skill in the art to determine the performance of the classification tree by maximizing such a mathematical equation  $L_{\text{Fract}} \times R_{\text{fract}} \times \sum \text{Fract} \times (L_{\text{Pen}} - R_{\text{Pen}})^2$  asserted utility or a well established utility. One can find it necessary to use such the abovementioned mathematical equation to maximize the performance of the classification tree. The specification does not enable one skilled in the art to make the claimed invention. More

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specifically, the segmentation system according to the specification page 5, the program searches a combination that optimize a measure of behavior and demographic data using Zhang's methodology to find all possible splits in the classification tree. The specification does not provide how one would maximize the above equation to determine a performance. It is also not clear of what performance the applicant is relied upon. Applicant is advised to amend the claims or provide some kind of explanation how such claims can be searched. Claims 14-16 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "substantially" in claims 1, 4 and 7 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claims 1, 4 and 7 recite "storing data for defining evaluation profiles". It is not clear as to which data the applicant is referring. Applicants are advised to amend the claims to remove such relative term and provide clarification of what data that is stored to define evaluation profiles in the claims.



***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 4 and 7-16 as best understood by the examiner are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazarus et al., (hereinafter "Lazarus") US Patent no.6,430,539 and Lars Perner (hereinafter "Perner") Article entitled "The psychology of consumers". As to claims 1 and 4, Lazarus discloses "generating a plurality of classification trees based on behavioral and demographic data for a set of consumers, each of said classification trees producing a consumer cluster set" creating a predictive model of future spending in each merchant segment based on transaction statistics of historical spending in the merchant segment (group) by those consumers who have purchased from merchants in the segments (col.3, lines 5-25; col.4, lines 12-37 and the ability to model consumer financial behavior based on actual historical spending patterns that reflect the time-related nature of each consumer's purchase

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(col.2, lines 23-30). Applicant should duly note that the term of classification refers to the problem of predicting the number of sets to which an item belongs by building a model based on some predictor variables. Lazarus discloses “searching said consumer cluster sets for an optimal consumer cluster set that optimizes a measure of the behavioral and demographic data, said optimal consumer cluster set having a plural of optimal consumer clusters, wherein each consumer in the set of consumers is included in only one of the consumer clusters in each consumer cluster set” as a best consumer cluster based on the behavior and demography information (col.11, lines 60-66, the optimal consumer cluster is the statistical analysis of the best possible segment having highest predicted spending percentile). However, Lazarus does not explicitly disclose the claimed “wherein consumers in each cluster of said plurality of cluster have substantially similar behavioral characteristics to each other and different behavioral characteristics from the consumers in all other clusters of said plurality of cluster”. Perner, on the other hand, discloses a similar system for helping firms and organization to improve their marketing strategies. In particular, Perner discloses the claimed “wherein consumers in each cluster of said plurality of cluster have substantially similar behavioral characteristics to each other and different behavioral characteristics from the consumers in all other clusters of said plurality of cluster” (page 7, paragraph, 4, Perner discloses the similarity and dissimilarity among consumers, similarity and dissimilarity behavior of Perner is when some consumers can switch from their preferred brand to another one that happens to be on sale, while others stay with the preferred brand); “storing data for defining evaluation profiles to evaluate partitioning of the consumer population” (page 11, wherein the demographics and social stratification of Perner focus from analyzing specific subcultures to understand the implication for an entire population);

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“determining counts for each of the decision nodes of each of the classification trees, the counts including a right split count, a left split count, and a total count for each of the decision nodes; storing summaries of the counts”( page 12, paragraph 2, Perner determines the counts of each decision node by involving in stratifying people into groups with various amounts of prestige); “determining a performance for each of the classification trees based on the evaluation profile data and the summaries of counts, wherein the determining a performance includes calculating a measure for each of the decision nodes of each of the classification trees based on the counts of each decision node””( page 12, paragraphs 2 and 3, Perner determines the counts of each decision node by involving in stratifying people into groups with various amounts of prestige and by illustrating the reality that social status is a complex variable that is determined)); and comparing the performance of the classification trees to determine the classification tree producing the optimal consumer cluster set, whereby the consumer clusters in the optimal consumer cluster set are used to focus marketing on groups of consumers likely to purchase a marketed product or service.”(Page 15, paragraph 1, Perner discloses the above-mentioned limitation as a group influences). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lazarus system by incorporating the consumer behavior and marketing strategy of Perner in order to provide quality solutions that generate proven results by capitalizing on new segment opportunities

As to claim 7, As to claims 1 and 4, Lazarus discloses “generating a plurality of classification trees based on behavioral and demographic data for a set of consumers, each of said classification trees producing a consumer cluster set” creating a predictive model of future

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spending in each merchant segment based on transaction statistics of historical spending in the merchant segment (group) by those consumers who have purchased from merchants in the segments (col.3, lines 5-25; col.4, lines 12-37 and the ability to model consumer financial behavior based on actual historical spending patterns that reflect the time-related nature of each consumer's purchase (col.2, lines 23-30). Applicant should duly note that the term of classification refers to the problem of predicting the number of sets to which an item belongs by building a model based on some predictor variables. Lazarus discloses "searching said consumer cluster sets for an optimal consumer cluster set that optimizes a measure of the behavioral and demographic data, said optimal consumer cluster set having a plural of optimal consumer clusters, wherein each consumer in the set of consumers is included in only one of the consumer clusters in each consumer cluster set" as a best consumer cluster based on the behavior and demography information (col.11, lines 60-66, the optimal consumer cluster is the statistical analysis of the best possible segment having highest predicted spending percentile). However, Lazarus does not explicitly disclose the claimed "wherein consumers in each cluster of said plurality of cluster have substantially similar behavioral characteristics to each other and different behavioral characteristics from the consumers in all other clusters of said plurality of cluster". Perner, on the other hand, discloses a similar system for helping firms and organization to improve their marketing strategies. In particular, Perner discloses the claimed "wherein consumers in each cluster of said plurality of cluster have substantially similar behavioral characteristics to each other and different behavioral characteristics from the consumers in all other clusters of said plurality of cluster" (page 7, paragraph, 4, Perner discloses the similarity and dissimilarity among consumers, similarity and dissimilarity behavior of Perner is when some

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consumers can switch from their preferred brand to another one that happens to be on sale, while others stay with the preferred brand); “storing data for defining evaluation profiles to evaluate partitioning of the consumer population” (page 11, wherein the demographics and social stratification of Perner focus from analyzing specific subcultures to understand the implication for an entire population); “determining counts for each of the decision nodes of each of the classification trees, the counts including a right split count, a left split count, and a total count for each of the decision nodes; storing summaries of the counts” (page 12, paragraph 2, Perner determines the counts of each decision node by involving in stratifying people into groups with various amounts of prestige); “determining a performance for each of the classification trees based on the evaluation profile data and the summaries of counts, wherein the determining a performance includes calculating a measure for each of the decision nodes of each of the classification trees based on the counts of each decision node” (page 12, paragraphs 2 and 3, Perner determines the counts of each decision node by involving in stratifying people into groups with various amounts of prestige and by illustrating the reality that social status is a complex variable that is determined); and comparing the performance of the classification trees to determine the classification tree producing the optimal consumer cluster set, whereby the consumer clusters in the optimal consumer cluster set are used to focus marketing on groups of consumers likely to purchase a marketed product or service.” (Page 15, paragraph 1, Perner discloses the above-mentioned limitation as a group influences). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lazarus system by incorporating the consumer behavior and marketing strategy of Perner in

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order to provide quality solutions that generate proven results by capitalizing on new segment opportunities

As to claim 8, Lazarus discloses the claimed “a summarization module adapted to generate summary data, said summary data being a summarization of data contained in said cluster assignments module” (see col.1, lines 35-47; col.3, lines 1-6 and col.12, lines 57-62); and a summary data module adapted to store said summary data” (col.5, lines 28-31 and col.10, lines 24-28).

As to claim 9, Lazarus discloses the claimed “wherein said profile definitions module comprises a database” (col.10, lines 24-27).

As to claim 10, Lazarus discloses the claimed “wherein said profile data module comprises an electronic file” (col.10, lines 22-24).

As to claims 11 and 12, Lazarus discloses the use of SQL query language to execute the segment definitions module (col.14, lines 48-50). Such SQL query language is used to manipulate data from a relational database, wherein the relation database includes spreadsheet information or other data source (such as an Excel worksheet or dBase file). Such dbase file as claimed is well known in the art.

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As to claims 14-16, Perner discloses a segmentation system using claritas, marketing tool to find the all possible splits in the classification tree in order to maximize the performance of the classification tree (page 6, paragraph 4 and segment structure). As best understood, Perner discloses the mathematic equation of claims 14-16, using the consumer attitudes (page 25, paragraph 3-5).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 3, 5, 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazarus et al., (hereinafter "Lazarus") US Patent no. 6,430,539 and Zhang, article entitled "Classification trees".

As to claims 2 and 5, Lazarus does not explicitly disclose the use that the classification tree Zhang's methodology. Zhang discloses the claimed "classification trees using Zhang's methodology" (page 181, section 2.2; fig.3; fig.4; fig.5) Zhang, on the other hand, discloses the use of creating a classification a plurality of classification tree base on demographics and behavior data (page 181, section 2.2; fig.3; fig.4; fig.5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of the cited references. One having ordinary skill in the art would have found it motivated to use such a combination for the purpose of increasing marketing effectiveness.

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As to claim 3 and 6, Zhang discloses the claimed “wherein said searching using Zhang’s methodology” (page 181, section 2.2; fig.3; fig.4; fig.5).

As to claim 13, Zhang discloses the claimed “wherein said partitioning module uses Zhang’s methodology to create classification trees” (page 181, section 2.2; fig.3; fig.4; fig.5).

***Conclusion.***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean M. Corrielus whose telephone number is (571) 272-4032.

The examiner can normally be reached on 10 hours shift.

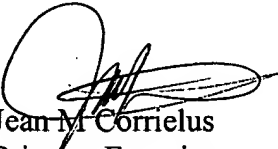
If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jean-M Corrielus  
Primary Examiner  
Art Unit 2162

December 11, 2006